**What is claimed is:**

1. A transmission power control method for controlling the transmission power of packet signals to be transmitted from a mobile station via an upstream radio channel, in a radio communication system for allowing radio communications between a base station and a plurality of mobile stations via code division multiple access (CDMA) radio channels, the method comprises the steps of:

measuring the traffic volume of the packet signals in the base station; and

switching between a first control method and a second control method based on the measured traffic volume in the base station, the first control method controlling the transmission power so as to keep the received power of the packet signals in the upstream radio channels constant, the second control method controlling the transmission power so as to keep a relationship between the received power of the packet signals and the interference power in the upstream radio channels constant.

2. A transmission power control method for controlling the transmission power of packet signals to be transmitted from a mobile station via an upstream radio channel, in a radio communication system for allowing radio communications between a base station and a plurality of mobile stations via code division multiple access (CDMA) radio channels, the method comprises the step of:

controlling the transmission power so as to keep a difference between the received power of the packet signals and

the interference power in the upstream radio channels constant.

3. A radio communication system for allowing radio communications between a base station and a plurality of mobile stations via code division multiple access (CDMA) radio channels, the system comprises:

a measurer configured to measure the traffic volume of the packet signals transmitted from the mobile station via upstream radio channels; and

a switcher configured to switch between a first control method and a second control method based on the measured traffic volume, the first control method controlling the transmission power of the packet signals in the mobile stations so as to keep the received power of the packet signals in the upstream radio channels constant, the second control method controlling the transmission power of the packet signals in the mobile stations so as to keep a relationship between the received power of the packet signals and the interference power in the upstream radio channels constant.

4. A base station for communicating with a plurality of mobile stations via code division multiple access (CDMA) radio channels, the base station comprises:

a measurer configured to measure the traffic volume of the packet signals transmitted from the mobile station via upstream radio channels; and

a switcher configured to switch between a first control method and a second control method based on the measured traffic volume, the first control method controlling the transmission

power of the packet signals in the mobile stations so as to keep the received power of the packet signals in the upstream radio channels constant, the second control method controlling the transmission power of the packet signals in the mobile stations so as to keep a relationship between the received power of the packet signals and the interference power in the upstream radio channels constant.

5. The base station according to claim 4, wherein

the measurer measures an average interference power in the upstream radio channels per time unit as the traffic volume of the packet signals, and

the switcher switches between the first control method and the second control method, based on the average interference power and a predetermined threshold.

6. The base station according to claim 4, further comprising:

a notification signal transmitter configured to transmit a notification signal for notifying the traffic volume of the packet signals measured by the measurer and the control method of the transmission power selected by the switcher; and

an acknowledgement signal transmitting controller configured to judge whether or not to transmit an acknowledgement signal for indicating that received power of an access control signal received from the mobile station satisfies a predetermined condition.

7. The base station according to claim 6, wherein the

predetermined condition is that the received power of the access control signal is smaller than a predetermined power, when the first control method is selected by the switcher.

8. The base station according to claim 6, wherein the predetermined condition is determined based on the received power of the access control signal and the interference power in the upstream radio channels, when the second control method is selected by the switcher.

9. A base station for communicating with a plurality of mobile stations via code division multiple access (CDMA) radio channels, wherein the base station controls the transmission power of packet signals to be transmitted from the mobile station via an upstream radio channel, so as to keep a difference between the received power and the interference power in the upstream radio channels constant.

10. A mobile station for communicating with a base station via code division multiple access (CDMA) radio channels, the mobile station comprises:

a notification signal received power measurer configured to measure the received power of a notification signal transmitted from the base station;

an extractor configured to extract the traffic volume of packet signals transmitted via upstream radio channels and a control method of the transmission power of the packet signals selected in the base station, from the notification signal; and

a transmission judger configured to judge whether or not

to transmit the packet signals, based on the received power of the notification signal, the traffic volume of the packet signals and the control method of the transmission power of the packet signals.

11. The mobile station according to claim 10, further comprising:

an access control signal transmitter configured to transmit an access control signal with a predetermined transmission power via the upstream radio channel, before the transmission of the packet signals, when the transmission judger judges to transmit the packet signals; and

a packet signal transmitter configured to transmit the packet signals with the predetermined transmission power, when receiving an acknowledgement signal for indicating that the received power of the access control signal in the base station satisfies a predetermined condition from the base station.

12. The mobile station according to claim 11, wherein the access control signal transmitter increases the predetermined transmission power and transmits the access control signal again with the increased predetermined transmission power, when not receiving the acknowledgement signal during a predetermined period.

13. The mobile station according to claim 11, wherein the packet signal transmitter transmits the packet signals with the predetermined transmission power, when the mobile station does not receive the acknowledgement signal during a predetermined

period and the predetermined transmission power is the maximum transmission power in the mobile station.